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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,932	12/08/2003	Toshimitsu Konuma	0756-7221	9654
31780 7590 04/24/2007 ERIC ROBINSON PMB 955 21010 SOUTHBANK ST. POTOMAC FALLS, VA 20165			EXAMINER NGO, HUYEN LE	
			ART UNIT	PAPER NUMBER
			2871	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/24/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary	Application No. 10/728,932	Applicant(s) KONUMA, TOSHIMITSU	
	Examiner Julie-Huyen L. Ngo	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-30 is/are rejected.
- 7) ☒ Claim(s) 17 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 17 and 23 objected to because the added recitation, "wherein a number of the orientation films is two," does not further limit or clarify the claims but a repetition of the recitation already and clearly recited as a pair of orientations respectively formed between a pair of substrates. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo et al. (US4878742) in view of Kanemoto et al. (US5250214A).

Ohkubo et al. teach (Figs. 1-2) forming a display device comprising:

Claims 6, 12, 17 and 23:

- a pair of substrates 11/11'
- a liquid crystal layer 16" provided between said pair of substrates and comprising a nematic liquid crystal having positive dielectric anisotropy (col. 3, lines 58-58 and col. 7 lines 34-35);

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- a pair of orientation films 14/14' provided adjacent to and between said pair of substrates respectively and having anti-parallel orientation directions to each other (col. 9, lines 14-18);

wherein

- spacing between said substrates is $3.0\mu\text{m}$, which is less than $3.5\mu\text{m}$ (col. 9, line 14 to col. 10, line 13)
- the liquid crystal layer is in contact with the orientation films

Claims 7, 13, 18 and 24

- each of said orientation films comprises a polyimide (col. 9, lines 14-18)

Claims 9, 15, 20 and 26

- a first electrode 13 provided over one of said substrates; and a second electrode 13' provided over the other of said substrates

Claims 10, 16, 21 and 27:

- said nematic liquid crystal has a positive dielectric anisotropy (col. 3, lines 58-58 and col. 7 lines 34-35)

Claims 11, 22 and 28:

Claims 29-30:

- the orientation films have been rubbed in one direction (col. 6, lines 15-18 or col. 9, lines 15-16), thus almost all liquid crystal molecules of liquid crystal layer are substantially aligned in one direction.

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Ohkubo et al. display device comprises all the limitation recited in the above claims except for orientation films with a surface tension of 40 dyne/cm or more as recited in claims 6 and 12; and form their device as a reflective-type display device as recited in claims 8, 14, 19 and 25.

Kanemoto et al. teach (col. 26, lines 53-64) forming the orientation film with a surface tension of not smaller than 40 dyne/cm for spreading the LC polymer in its LC phase uniformly on a coated surface of an orientation film.

Therefore, it would have been obvious for one having ordinary skill in the art to modify Ohkubo et al. display device with orientation films having a surface tension of 40 dyne/cm or more for spreading the LC polymer in its LC phase uniformly on a coated surface of the orientation films, as taught by Kanemoto et al. The liquid crystal would therefore be in contact with the orientation films having surface tension of 40 dyne/cm or more.

With respect to claims 8, 14, 19 and 25:

It is well known and conventional in the art for a display device to be formed as a reflective-type display device by having a reflection layer formed on surface of lower substrate for reflecting ambient light. Doing so would reduce power consumption and having a brighter display.

Therefore, it would have been obvious for one having ordinary skill in the art to further modify Ohkubo in view of Kanemoto et al display device with a reflection layer on a surface of the lower substrate for reflecting ambient light. Doing so would reduce power consumption and having a brighter display.

Response to Arguments

Applicant's arguments with respect to claims 6, 12, 17 and 23 based on the Response filed on January 25, 2007 have been considered but are moot in view of the new ground(s) of rejection due to amendments in the these claims, however, the same references are still applicable. Therefore, this is Final action.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie-Huyen L. Ngo whose telephone number is (571) 272-2295. The examiner can normally be reached on M-Thursday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Julie-Huyen L. Ngo
Primary Examiner
Art Unit 2871